NOTE I.

THE NON-MARINE MOLLUSCS OF SURINAM.

I.

BY

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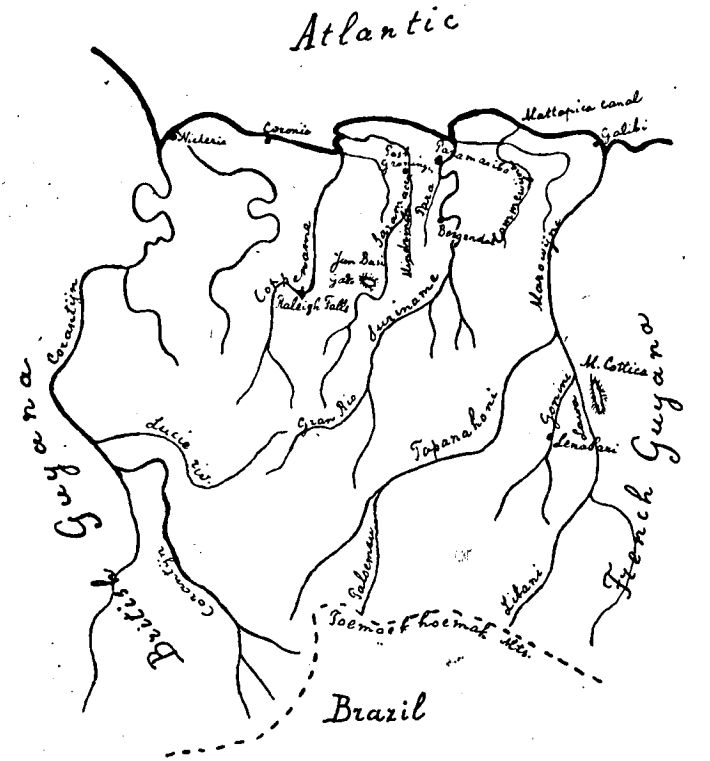
(With a sketch of Surinam and Plates 1 and 2).

Whilst the Mollusc-fauna of the Dutch colonies in the eastern hemisphere has been studied since very remote times, and its literature represents a considerable pile of very valuable papers, written by well-known conchologists and investigators of many parts of the world, the Dutch West-Indies, and especially Dutch Guyana or Surinam, are very little known in regard to their molluscs. As far as I know the only existing list of non-marine molluscs of Surinam is that given by the late Prof. Ed. von Martens in his „Binnenmollusken Venezuela's". That list excepted, it is only by chance that one finds the habitat „Surinam" in a malacological paper: either in a note on newly acquired collections of shells, or in monographs of some families, or in books of travels. The few references about molluscs from Surinam I happened to find in literature, are to be found at the end of this paper. I hope my fellow-conchologists will kindly inform me when any note on molluscs, collected in Surinam, is coming to their notice. I should not wonder if, besides the few mentioned in literature, still more specimens from Surinam are existing in some museum-collections.

Although many expeditions [1]) have been sent from our country to various parts of our South-American colony, they all had other aims than collecting animals. Only by chance some molluscs were brought home and presented to the Leyden Museum. Moreover this museum now and then had the good luck of receiving some shells from Surinam, from travellers in that country. Recently Jhr. W.



1) The seven expeditions to Surinam during the first decade of this century are named:

1. Coppename-Expeditie, 1901.
2. Saramacca-Expeditie, 1902/3.
3. Gonini-Expeditie, 1903/4.
4. Tapanahoni-Expeditie, 1904.
5. Toemoekhoemak-Expeditie, 1907.
6. Suriname-rivier-Expeditie, 1908.
7. Corantijn-Expeditie, 1910/11.

C. van Heurn, to whose infatigable ardour in collecting animals our museum is owing already many molluscs of the Dutch fauna, passed some months in Paramaribo, the capital of Surinam, and brought home from there large zoological collections, among them many molluscs. It was this collection that induced me to occupy myself with the non-marine molluscs of Surinam, and to look after the specimens from that colony, represented in the collection of the Leyden Museum. In doing so, I soon was struck by the fact that Mr. van Heurn's collection, obtained chiefly in the neighbourhood of Paramaribo, and only during a rather short period, chiefly spent in collecting higher animals, was containing not only a great deal of the species already recorded from Surinam, but also many species not yet recorded from there, and moreover some species new to science.

I am convinced that there will be found a great quantity of new species, or, at least, of species recorded from neighbouring parts of South-America, when a careful collecting of molluscs will be undertaken in Surinam, not only in the settlements on the coast, but also in the interior of the colony. I hope to be able to raise some interest in collecting molluscs, in persons dwelling in the country itself, and thus having the best opportunities for it.

In this paper I am giving a list of the non-marine, shell-bearing molluscs, recorded till now from Surinam, to which I have added the species, obtained by the Leyden Museum, mostly during the last years. In an other note Prof. H. Simroth will treat the slugs received from Surinam.

I have to thank the following gentlemen for kindly comparing specimens or allowing me to examine myself specimens from their collections: Mr. H. Fulton, Dr. F. Haas, Dr. F. Jousseaume, Mr. H. B. Preston, Mr. G. C. Robson, Mr. M. M. Schepman, Mr. G. B. Sowerby and Prof. J. Thiele.

The species, represented in the Leyden Museum, are marked with an *. To those, of which the alleged occurrence in Surinam is doubtful, is added a ?.

Besides the papers, containing the original description

and a figure of the species, I have cited also in most cases a recent paper, giving its literature. To each species I have added all the references concerning Surinam, which I found in literature (see at the end of this paper).

PULMONATA.

*1. STREPTAXIS GLABER Pfr.

Streptaxis glabra, Pfeiffer, Proc. Zool. Soc., 1849, p. 26.
Streptaxis glaber Pfr., Kobelt, Syst. Conch. Cab., Ed. nov., Band I, Abt. 12 B², 1906, p. 40, T. 51, f. 16, 17.

Environs of Paramaribo.	van Heurn, 1911.
Post Groningen.	van Heurn, 1911.
Nickerie.	van Heurn, 1911.

In his monograph of the Streptaxidae, Kobelt does not unite this species with *S. deformis* Fér. In comparing my specimens with the figures given by Kobelt, I feel inclined to take them for *S. glaber*. Perhaps it will be evident, when a great quantity of specimens can be compared, that both species are the same. In that case Férussac's name has the priority.

2. STREPTAXIS DEFORMIS Fér.

Helix deformis, Férussac, Prod., p. 42; Hist. Nat. Moll., T. 32*a*, f. 1.
Streptaxis deformis Fér., Kobelt, Syst. Conch. Cab., Ed. nov., Band I, Abt. 12 B², 1906, p. 39, T. 51, f. 20.

Drouet, 1859, p. 41.	Surinam.
Pfeiffer, 1872, p. 76.	Environs of Paramaribo.
Martens, 1873, pp. 165, 214.	Surinam.
Gude, 1902, p. 216.	Surinam.

von Martens considers this species and the preceding one as being synonymous.

*3. ENNEA BICOLOR Hutt.

Pupa bicolor, Hutton, Journ. As. Soc. Bengal, Vol. 3, 1834, p. 86.
Ennea bicolor Hutt., Kobelt, Syst. Conch. Cab., Ed. nov., Band I, Abt. 12 B¹, 1905, p. 128, T. 19, f. 1—3.

Environs of Paramaribo.	van Heurn, 1911.

Although it was not recorded before from Surinam, it needs not wonder this widely distributed species has been

collected there. Certainly it is owing to its small dimensions, that only one specimen was collected by Mr. van Heurn.

* 4. SCOLODONTA SURINAMENSIS Pfr.

Helix surinamensis, Pfeiffer, Malakozool. Bl. XIX, 1872, p. 75, T. 2, f. 14—16.

Scolodonta surinamensis Pfr., Kobelt, Syst. Conch. Cab., Ed. nov., Band I, Abt. 12 B², 1906, p. 69, T. 51, f. 24, 25.

Environs of Paramaribo.	van Heurn, 1911.
Post Groningen.	van Heurn, 1911.
Nickerie.	van Heurn, 1911.
Pfeiffer, 1872, p. 75.	Environs of Paramaribo.
Martens, 1873, p. 218 [1]).	Surinam.

Kobelt, 1906, p. 70 Env. of Paramaribo

Most of our specimens have $4^1/_4$ à $4^1/_2$ whorls.

* 5. EUGLANDINA STRIATULA nov. sp. (fig. 1).

Shell fusiform, thin, pellucid; yellowish-grey with many irregularly placed, longitudinal, brownish streaks. Whorls $6^1/_2$, convex; apex obtuse, the first whorl planorboid, the second shouldered, and rather flatly sloping outward. Near the end of the third whorl, a fine sculpture of spiral striae appears, decussated by faint folds. Gradually these folds, some of them bifurcating, become stronger; at the sutural border they are forming big grains. Aperture slightly oblique; columella faintly convex above, then straight.

Length $46^1/_2$, diam. $18^1/_2$, length of aperture 23, diam. 9 m.M.

Type in the Leyden Museum.

Lawa. Gonini-Expeditie.

This species bears much resemblance to *E. striata* Müll. It can be distinguished by the whorls being more convex, and the suture more oblique than in the latter species. Also the height of the corresponding whorls is greater, and the folds are closer set and less coarse in this new species.

1) Erroneously printed under *Solaropsis*.

* 6. EUGLANDINA SURINAMENSIS nov. sp. (fig. 2).

Shell fusiform, rather solid, corneous, with irregularly placed, longitudinal brownish streaks on the last two whorls. Whorls 6, a little convex; apex obtuse, the second whorl not shouldered, but slightly rounded. On the fourth whorl a sculpture of fine spiral striae and irregular faint folds appears. On the last two whorls these folds, some of them bifurcating, become a little more distinct; they are however not strongly developed; at the suture they are forming a crenulated border. Aperture vertical; columella concave.

Length 32, diam. $13^1/_2$, length of aperture $16^1/_2$, diam. 8 m.M.

Type in the Leyden Museum.

Post Groningen. van Heurn, 1911.

I could not identify this shell with any species of *Euglandina* recorded from the north and north-east of South-America. It is easily distinguished from young specimens of the preceding species by the shape of the apex and by the sculpture of the last whorls.

Some other specimens of an *Euglandina*, collected in the environs of Paramaribo, one of them apparently subfossil, are in too bad a condition to identify them. Possibly they might also belong to this species.

Till now the genus *Euglandina* had not been recorded from Surinam. No doubt a careful investigation of the mollusc-fauna of this colony will bring to light more species of this South- and Central-American genus.

* 7. CONULUS ERNSTI Jouss.

Ernstia ernsti, Jousseaume, Mém. Soc. Zool. de France, Tome II, 1889, p. 251, Pl. IX, f. 17, 18.

Post Groningen. van Heurn, 1911.

Only one specimen of this little shell has been collected, agreeing with the description and figures given by Mr. Jousseaume. It is not necessary to substitute the generic name *Conulus* by the new name *Ernstia*, the Echinoderm genus

Conulus, created by Klein, dating from 1734, twenty-four years before the 10th edition of Linné's Systema Naturae was published.

* 8. Solaropsis pellisserpentis Chemn.

Helix pellisserpentis, Chemnitz, Syst. Conch. Cab., Band XI, 1795, p. 268, T. 208, f. 2046, 2047.
Pilsbry, Man. of Conch., 2. ser., Vol. V, 1889, p. 178, Pl. 50, f. 74—76, 82, 83.
Solaropsis pellisserpentis Chemn., Pilsbry, Man. of Conch., 2. ser., Vol. IX, 1894, p. 166.

Surinam.	Voltz.
Upper Saramacca.	Saramaccà-Expeditie.
Drouet, 1859, p. 42.	Surinam.
Martens, 1873, p. 218.	Surinam.
Kappler, 1887, p. 204. (*Helix pillis*! *Helix serpentis*! probably this and the next species.)	Surinam.

The specimen, collected by Mr. Voltz, is a little smaller than the Saramacca one, and has the peculiar pits on the left side but faintly indicated.

* 9. Solaropsis serpens Martyn.

Limax serpens, Martyn, Univ. Conchol. III, 1784, T. 120.
Helix serpens Martyn, Pilsbry, Man. of Conch., 2. ser., Vol. V, 1889, p. 179, Pl. 58, f. 38—41, Pl. 59, f. 50—52.
Solaropsis serpens Martyn, Pilsbry, Man. of Conch., 2. ser., Vol. IX, 1894, p. 166.

Coast-region of Surinam.	ten Kate.
Environs of Paramaribo.	van Heurn, 1911.
Pfeiffer, 1872, p. 76.	Missionary-station Beekhuizen (South of Paramaribo).
Martens, 1873, p. 218.	Surinam.

Mr. van Heurn's specimens apparently have been collected as dead ones. They are bleached and some of them much damaged.

10. Solaropsis monolacca Pfr.

Helix monolacca, Pfeiffer, Malakozool. Bl. IV, 1857, p. 155; Novit. Conchol. I, 1857, T. 38, f. 1, 2.
Pilsbry, Man. of Conch., 2. ser., Vol. V, 1889, p. 182, Pl. 51, f. 90, 91.

Solaropsis monolacca Pfr., Pilsbry, Man. of Conch., 2. ser. Vol. IX, 1894, p. 166.
Pfeiffer, 1859, p. 155. Surinam.
Drouet, 1859, p. 42. Surinam.
Martens, 1873, p. 218. Surinam.

*11. Solaropsis kühni Pfr.

Helix kühni, Pfeiffer, Malakozool. Bl. XIX, 1872, p. 74, T. 2, f. 8—10.
Pilsbry, Man. of Conch., 2. ser., Vol. V, 1889, p. 189, Pl. 59, f. 55—57.
Solaropsis kühni Pfr., Pilsbry, Man. of Conch., 2. ser., Vol. IX, 1894, p. 166.
Environs of Paramaribo. van Heurn, 1911.
Pfeiffer, 1872, p. 74. Environs of Paramaribo.
Martens, 1873, p. 218. Surinam.

This species and the next one, that I know only by the figures, seem to have much resemblance. Our specimens, being very distinctly granulate at the base, according to Pilsbry's definition of both species, must belong to *S. kühni*.

12. Solaropsis rosarium Pfr.

Helix rosarium, Pfeiffer, Proc. Zool. Soc., 1849, p. 131.
Pilsbry, Man. of Conch., 2. ser., Vol. V, 1889, p. 188, Pl. 60, f. 13—15, Pl. 61, f. 6—10.
Solaropsis rosarium Pfr., Pilsbry, Man. of Conch., 2. ser., Vol. IX, 1894, p. 166.
Pilsbry, 1889, p. 188. Surinam.

?*13. Pleurodonte acuta Lam., var.

Helix acuta, Lamarck, Encycl. Méth., T. 462, f. 1.
Pilsbry, Man. of Conch., 2. ser., Vol. V, 1889, p. 101, Pl. 26, f. 58, 61, 65.
Pleurodonte acuta Lam., Pilsbry, Man. of Conch., 2. ser., Vol. IX, 1894, p. 89.
Surinam. Cab. Raye.

?*14. Pleurodonte lucerna Müll.

Helix lucerna, Müller, Hist. Verm. II, 1774, p. 13.
Pilsbry, Man. of Conch, 2. ser., Vol. V, 1889, p. 105. Pl. 30, f. 46—49.

Pleurodonte lucerna Müll., Pilsbry, Man. of Conch., 2. ser., Vol. IX, 1894, p. 89.
Surinam. Cab. Dalen.

? * 15. PLEURODONTE CAROCOLLA L.

Helix carocolla Linné, Syst. Nat. X, 1758, p. 169.
Pilsbry, Man. of Conch., 2. ser., Vol. V, 1889, p. 120, Pl. 21, f. 1, 2, 5—7, Pl. 24, f. 89.
Pleurodonte caracolla L., Pilsbry, Man. of Conch., 2. ser., Vol. IX, 1894, p. 93.
Surinam? Cab. Raye.

? * 16. PLEURODONTE SARCOCHEILA Mörch.

Helix sarcocheila, Mörch, Cat. Kierulf, 1850, p. 28, T. 1, f. 1.
Pilsbry, Man. of Conch., 2. ser., Vol. V, 1889, p. 122, Pl. 56, f. 1, 2.
Pleurodonte sarcocheila Mörch, Pilsbry, Man. of Conch., 2. ser., Vol. IX, 1894, p. 93.
Surinam? Cab. Raye and Cab. Dalen.

The specimens of the species 13, 14, 15 and 16 have come in the possession of the Leyden Museum by purchasing the collection of Mr. Joan Raye in 1827, and that of Dr. Dalen in 1853. As far as I know, none of these species, inhabitants of the Greater Antilles, has been reported from South-America. Consequently it is very doubtful that they have been collected in Surinam. Their being labelled „Surinam", the last two moreover with a ?, perhaps will be owing to the fact, that they were brought to Holland via Surinam. I have mentioned them in this list in order to draw the attention of conchologists and collectors to these species, eventually having been imported in South-America.

? 17. PLEURODONTE BIFURCATA Desh.

Helix bifurcata, Deshayes, Guérin's Mag. de Zool., 1838, T. 111, f. 2.
Pilsbry, Man. of Conch, 2. ser., Vol. V, 1889, p. 170, Pl. 64, f. 22—25.
Pleurodonte bifurcata Desh., Pilsbry, Man. of Conch., 2. ser., Vol. IX, 1894, p. 95.
Martens, 1873, p. 214. Surinam.

von Martens is not quite sure if the localities in Venezuela and Guyana, given for this species, an inhabitant of the eastern slopes of the Andes, are not depending on the shells having been brought to Europe with ships, sailing from sea-ports in these countries.

* 18. Strophocheilus oblongus Müll.

Helix oblonga, Müller, Hist. Verm. II, 1774, p. 86.
Strophocheilus oblongus Müll., Pilsbry, Man. of Conch., 2. ser., Vol. X, 1895, p. 29, Pl. 14, f. 70—73.

Surinam.	?
Surinam.	ten Kate.
Environs of Paramaribo.	van Cappelle, 1900.
Environs of Paramaribo.	van Heurn, 1911.
Post Groningen.	van Heurn, 1911.
Lister, 1685, 23, 21.	Surinam.
Albers, 1860, p. 191.	Surinam.
Martens, 1873, pp. 171, 214.	Surinam.

This widely distributed species seems to be very common in Surinam. Mr. van Heurn's collection contained shells of various stages of age.

? 19. Strophocheilus ovatus Müll.

Helix ovata, Müller, Hist. Verm. II, 1774, p. 85.
Strophocheilus ovatus Müll., Pilsbry, Man. of Conch., 2. ser., Vol. X, 1895, p. 24, Pl. 12, f. 60, 61.

Kappler, 1887, p. 204.	Surinam.

Kappler says that this snail is very common in many places in Surinam. The short description he gives of it, is just agreeing with *S. oblongus*. For that reason, and because nobody else has mentioned or collected *S. ovatus* in Surinam, I suppose Kappler's species was the preceding.

* 20. Auris distorta Brug.

Bulimus distortus, Bruguière, Encycl. Méth. I, p. 344.
Auris distorta Brug., Pilsbry, Man. of Conch., 2. ser., Vol. X, 1896, p. 109, Pl. 40, f. 21—32.

Coast-region of Surinam.	ten Kate.
Environs of Paramaribo.	van Heurn, 1911.
Post Groningen.	van Heurn, 1911.
Schepman, 1887, pp. 155, 164.	Marowijne (subfossil).

This is the form, somewhat resembling *A. glabra* Gmel., recorded by von Martens, 1873, p. 176. I think it is also, and even more, resembling *A. aurissciuri* Guppy, as figured by Pilsbry, Man. of Conch., 2. ser., Vol. X, Pl. 41, f. 42—44. Apparently this form is not rare in Surinam. The largest specimen measures $40^1/_2$ m.M., the smallest one 26 m.M.

? 21. AURIS GLABRA Gmel.

Voluta glabra, Gmelin, Syst. Nat. p. 3436.
Auris glabra Gmel., Pilsbry, Man. of Conch., 2. ser., Vol. X, 1896, p. 113, Pl. 41, f. 33—37.
Drouet, 1859, pp. 42, 65. Surinam.
Martens, 1873, p. 218. Surinam.

I suppose von Martens gives the locality „Surinam" upon the authority of Drouet; this author says that this species has been found in British and Dutch Guyana, without quoting any author upon which this statement is founded. Upon de Grateloup's authority Drouet includes this species in his list of land- and freshwater-molluscs of French Guyana. The preceding form of *A. distorta* is not unlikely to have been mistaken for this West-Indian species.

* 22. DRYMAEUS SEMIMACULATUS Pilsbry.

Bulimus maculatus, Lea (non Brug., 1792), Transact. Am. Phil. Soc. VI, 1839, p. 86, Pl. 23, f. 112.
Drymaeus semimaculatus, Pilsbry, Man. of Conch., 2. ser., Vol. XI, 1898, p. 297, Vol. XII, 1899, Pl. 5, f. 8, 9.
Environs of Paramaribo. 1904.
Post Groningen. van Heurn, 1911.

The fullgrown specimen from Paramaribo is agreeing nearly exactly with the definition and figures, given by Mr. Pilsbry; only it is slightly larger, its length being about 25 m.M., its diam. 11 m.M.

* 23. DRYMAEUS INTERRUPTOFASCIATUS nov. sp. (figs. 5, 6).

Shell subperforate oblong-conic, thin; yellowish corneous, with five spiral dark-brown bands, the upper three more or less interrupted, the lower two broad, continuous. Sur-

face rather smooth, with many growth-markings and fine spiral lines, visible only under the lens. Whorls 6, very slightly convex, the last one nearly half the total length. Aperture ovate, oblique; peristome thin, sharp; columellar margin narrowly reflexed.

Length 17, diam. 9 1/2, length of aperture 9 m.M. (Paramaribo).

Length 18, diam. 9, length of aperture 9 m.M. (Tapanahoni).

Type in the Leyden Museum.

Environs of Paramaribo.	van Heurn, 1911.
Tapanahoni.	Tapanahoni-Expeditie.

This species is characterized by the two subperipheral bands being uninterrupted, the lower one encircling the nearly closed umbilicus. The last whorl is faintly carinate. The Tapanahoni-specimens (fig. 6) have the apex blackish brown.

*24. DRYMAEUS QUADRIFASCIATUS nov. sp. (fig. 4).

Shell imperforate, conic, fragile, thin; whitish with four spiral dark-brown bands, placed at equal distances, two supraperipheral, and two subperipheral, surface glossy, with many growth-markings. Whorls about 5, nearly plain, the last one more than half the total length; apex blackish brown. Aperture ovate, oblique; peristome thin, sharp; columellar margin reflexed over the umbilicus.

Length 16 1/2, diam. 9, length of aperture 9 1/2 m.M.

Type in the Leyden Museum.

Jan Basi Gado.	Saramacca-Expeditie.

The two specimens, possibly not fully developed, have the outer margin of the peristome somewhat damaged. The species will be easily recognized by the four continuous brown bands.

*25. DRYMAEUS FLAVIDUS Menke.

Bulimus flavidus, Menke, Verzeichn. der Conch.-Samml. des Freiherrn v. d. Malsburg, 1829, p. 6.

Drymaeus flavidus Menke, Pilsbry, Man. of Conch., 2. ser., Vol. XI, 1898, p. 310, Pl. 26, f. 71—73.

Jan Basi Gado. Saramacca-Expeditie.
Lucie River. Corantijn-Expeditie.

The three specimens are all immature. The largest one, still lacking about $^3/_4$ whorl, is agreeing with the description and figures, given by Mr. Pilsbry.

*26. DRYMAEUS spec. (fig. 7).

Lucie River. Corantijn-Expeditie.

Only one specimen, too young to be identified sufficiently. The hyaline shell is coloured by dark brown spots, forming interrupted spiral bands, and interrupted, but also continuous, undulating vertical streaks. The apex is blackish brown. Possibly it is related to *D. bogotensis* Pfr.

*27 DRYMAEUS SURINAMENSIS nov. sp. (fig. 3).

Shell rimate, fusiform, thin, fragile; whitish, glossy. First $1^1/_2$ whorl reddish-brown at the top. Surface smooth, with slight growth-lines, showing under the lens very fine spiral striae. Whorls 6, very slightly convex, the last more than half the total length of the shell. Aperture large, slightly oblique, angular above, rounded below; peristome expanded, columellar margin broadly reflexed; columella oblique.

Length $24^1/_2$, diam. $10^1/_2$, length of aperture 13 m.M.

Type in the Leyden Museum.

Post Groningen. van Heurn, 1911.

A very thin, fragile shell. All specimens are more or less damaged. The shape is somewhat like *D. protractus* Pfr., as figured by Mr. Pilsbry in his Manual 2. series, Vol. XI, Pl. 42, f. 61, but the sculpture is quite different. Mr. Robson wrote to me, he would not care to venture an opinion as to its positive identity.

*28. DRYMAEUS SUCCINEUS Pilsbry.

Drymaeus succineus, Pilsbry, Man. of Conch., 2. ser., Vol. XIV, 1901, p. 160, Pl. 26, f. 38.

Post Groningen. van Heurn, 1911.

Only a single specimen of this very fragile shell, agreeing with the cited description and figure.

? 29. Drymaeus debilis Beck.

Bulimulus debilis, Beck, Index Moll., 1837, p. 65.
Drymaeus debilis Beck, Pilsbry, Man. of Conch., 2. ser., Vol. XI, 1898, p. 311, Pl. 26, f. 74, 75.
Albers, 1860, p. 216. Surinam.
Martens, 1873, pp. 186, 215. Surinam.

von Martens says that the specimen in Albers' collection, labelled „Dutch Guyana", is an immature one, which is much more agreeing with shells, he took for *D. membranaceus* Phil. (see next species).

? 30. Drymaeus venezuelensis Marts.

Otostomus membranaceus, Martens (non Phil.), Festschr. hundertj. Best. Ges. naturf. Fr. Berlin, 1873, p. 186 (pr. p.).
Otostomus venezuelensis, Martens, Biol. Centr.-Amer., moll. terr., 1893, p. 224.
Drymaeus venezuelensis Marts., Pilsbry, Man. of Conch., 2. ser., Vol. XI, 1898. p. 312, Pl. 50, f. 80.
Martens, 1873, pp. 186, 215. Surinam.

The locality „Surinam" in von Martens' list apparently is based, for this species as well as for the preceding, on one and the same specimen in Albers' collection. There being much confusion as to the identification of von Martens' specimens of *D. membranaceus* (see Pilsbry, Vol. XI, p. 238 and Vol. XII, p. 74), and moreover the single specimen from Surinam of Albers' collection, according to von Martens, being immature, it is preferable to cancel in von Martens' list *D. debilis* and *D. membranaceus*, and in stead of both species, to mention only a *Drymaeus* spec. as occurring in Surinam.

31. Drymaeus ziegleri Pfr.

Bulimulus ziegleri, Pfeiffer, Proc. Zool. Soc., 1846, p. 113.
Drymaeus ziegleri Pfr., Pilsbry, Man. of Conch., 2. ser., Vol. XII, 1899, p. 39, Pl. 40, f. 4—6.

Pfeiffer, 1872, p. 76. Environs of Paramaribo
Martens, 1873, p. 218. Surinam.

As Pfeiffer himself records this species from Paramaribo, I feel not justified to doubt of its occurrence in Surinam. Only a careful comparison of the specimen, from which the original description was drawn, with the specimens collected by Kühn and recorded by Pfeiffer, could give evidence on the specific identity. According to Pilsbry *D. ziegleri* is only found in the West of Mexico.

* 32. Bulimulus buenavistensis Pilsbry.

Bulimus corneus, Lea (non Sow., 1833), Transact. Am. Phil. Soc., Vol. VI, 1836, p. 66, Pl. 23, f. 111.
Bulimulus buenavistensis, Pilsbry, Man. of Conch., 2. ser., Vol. XI, 1897, p. 59, Pl. 10, f. 95.
Environs of Paramaribo. van Heurn, 1911.
Post Groningen. van Heurn, 1911.

This species is easily distinguishable by its very fine raised cuticular spirals. The largest specimen measures: length 14, diam. $7^1/_2$, length of apert. 7 m.M.

* 33. Bulimulus unicolor Sow.

Bulinus unicolor, Sowerby, Proc. Zool. Soc., 1833, p. 73; Conchol. Illustr., f. 43.
Bulimulus unicolor Sow., Pilsbry, Man. of Conch., 2. ser., Vol. XI, 1897, p. 53, Pl. 10, f. 7.
Environs of Paramaribo. van Heurn, 1911.

Only a single specimen of this shell was collected. It is somewhat more slender than all my specimens of the preceding species, and the spirals, as seen under a strong lens, have not the characteristic appearance as in *B. buenavistensis*. Perhaps it might be only a variety of the preceding species.

* 34. Zebra bensoni Rve.

Bulimus bensoni, Reeve, Conch. Icon., Vol. V, 1849, Bulimus spec. 571.
Oxystyla bensoni Rve, Pilsbry, Man. of Conch., 2. ser., Vol. XII, 1899, p. 147, Pl. 31, f. 62—65.

Zebra bensoni Rve, Strebel, Mitteil. Naturhist. Mus. Hamburg, XXVI, 1909, p. 93, T. 20, f. 310, 311, 317, 318, 321.
Nickerie. Voltz.
Upper Saramacca. Saramacca-Expeditie.
Environs of Paramaribo. van Heurn, 1911.
Guyana Goldplacer (on the Mindrinetie). van Heurn, 1911.
Albers, 1860, p. 225. Surinam.
Pfeiffer, 1872, p. 76. Environs of Paramaribo.
Martens, 1873, p. 218. Surinam.

The Saramacca-specimen measures: length 62, diam. $31^1/_2$ m.M., the largest one of the other specimens: length 43, diam. 23 m.M.

35. ZEBRA PULCHELLUS Spix.

Achatina pulchella, Spix, Testac. Brasilia, 1827, Pl. 9, f. 2.
Oxystyla pulchella Spix, Pilsbry, Man. of Conch., 2. ser., Vol. XII, 1899, p. 135, Pl. 28, f. 27—37.
Zebra pulchellus Spix, Strebel, Mitteil. Naturhist. Mus. Hamburg, XXVI, 1909, p. 57, T. 10, f. 150, 151, 154—156.
Pfeiffer, 1859, p. 588. Surinam.
Pilsbry, 1899, p. 136. Surinam.

? 36. ZEBRA PRINCEPS Brod.

Bulinus princeps, Broderip, Proc. Zool. Soc., 1832.
Sowerby, Conch. Illustr., 1833, Bulimus, f. 18.
Oxystyla princeps Brod., Pilsbry, Man. of Conch., 2. ser., Vol. XII, 1899, p. 113, Pl. 16, Pl. 17, f. 10—12.
Zebra princeps Brod., Strebel, Mitteil. Naturhist. Mus. Hamburg, XXVI, 1909, p. 18, T. 1, f. 1—3, 5—11, T. 2, f. 21, 25—28, 31, 32.
Kappler, 1887, p. 204. Surinam.

I suppose Kappler has mistaken *Z. pulchellus* or *bensoni* for this Central-American species.

* 37. CORONA PERVERSA Swains.

Achatina perversa, Swainson, Zool. Illustr. I, 1820—21, Pl. 36.
Liguus perversus Swains., Pilsbry, Man. of Conch., 2. ser., Vol. XII, 1899, p. 178, Pl. 36, f. 20—23.
Corona perversa Swains., Strebel, Mitteil. Naturhist. Mus. Hamburg, XXVI, 1909, p. 132, T. 27, f. 400, 403, 408.
Surinam. Coppename-Expeditie.
Lucie River. Corantijn-Expeditie.

Strebel, 1909, pp. 132, 133. Surinam, Upper Surinam River.

38. Corona regina Fér.

Helix regina, Férussac, Prodr., 1822, p. 42; Hist. nat., T. 119, f. 3—5.
Liguus regina Fér., Pilsbry, Man. of Conch., 2. ser., Vol. XII, 1899, p. 177, Pl. 33, f. 1, 2, 4, 5.
Corona regina Fér., Strebel, Mitteil. Naturhist. Mus. Hamburg, XXVI, 1909, p. 121, T. 25, f. 381—384, 388, T. 26, f. 389, 390.
Pfeiffer, 1872, p. 16. Upper Surinam River.

39. Corona incisa Hupé.

Bulimus incisus, Hupé, in Castelnau, Expéd. dans l'Amér. du Sud, Moll., 1857, p. 36, Pl. 9, f. 1.
Orthalicus melanostoma, Shuttleworth, Notit. Malacol. I, p. 67.
Liguus incisus Hupé, Pilsbry, Man. of Conch., 2. ser., Vol. XII, 1899, p. 179, Pl. 35, f. 15—17.
Corona incisa Hupé, Strebel, Mitteil. Naturhist. Mus. Hamburg, XXVI, 1909, p. 130, T. 27, f. 411.
Pfeiffer, 1859, p. 591. Surinam.
Drouet, 1859, p. 68. Surinam.
Pilsbry, 1899, p. 180. Surinam.

*40. Corona spec. (fig. 8).

Lucie River. Corantijn-Expeditie.

A very young dextral shell, having only $3^1/_2$ whorls; on the last $^1/_4$ whorl wide brown streaks. It has a small band on the keel, and two broad bands on the base, all of them brown coloured.

*41. Orthalicus sultana Dillw.

Helix sultana, Dillwyn, Descript. Catal. II, 1817, p. 920.
Orthalicus sultana Dillw., Pilsbry, Man. of Conch., 2. ser., Vol. XII, 1899, p. 188, Pl. 47, f. 6—8.
Strebel, Mitteil. Naturhist. Mus. Hamburg, XXVI, 1909, p. 142, T. 21, f. 344, T. 30, f. 436, 438.
Surinam. Coppename-Expeditie.
Upper Saramacca. Saramacca-Expeditie.
Marowijne. Tapanahoni-Expeditie.
Albers, 1860, p. 225. Surinam.

Pfeiffer, 1872, p. 76. Upper Surinam River.
Martens, 1873, p. 218. Surinam.
Kappler, 1887, p. 204. Surinam.
Strebel, 1909, pp. 142, 144, 145. Surinam, Upper Marowijne, Para District.

* 42. SIMPULOPSIS CORRUGATA Guppy.

Simpulopsis corrugatus, Guppy, Ann. Mag. Nat. Hist. (3), Vol. XVII, 1866, p. 53.
Simpulopsis corrugata Guppy, Pilsbry, Man. of Conch., 2. ser., Vol. XII, 1899, p. 217, Pl. 64, f. 93—95.
Post Groningen. van Heurn, 1911.

The single specimen, collected by Mr. van Heurn, is agreeing in every respect with the description given by Mr. Pilsbry. The occurrence of this species in Guyana is reducing very much the wide geographic separation, believed to exist between *S. corrugata* (Trinidad) and *S. rufovirens* Moric. (Province of Bahia, Brazil). Possibly Mr. Smith [1]) is right in uniting the two species. In that case Moricand's name has the priority for the species; and *corrugata* may be the name for the Trinidad- and Guyana-variety.

* 43. OPEAS GRACILE Hutt.

Bulimus gracilis, Hutton, Journ. As. Soc. Bengal, Vol. III, 1834, pp. 93, 85.
Achatina subula, Pfeiffer, Arch. f. Naturgesch., 1839, p. 352.
Opeas gracile Hutt., Pilsbry, Man. of Conch., 2. ser., Vol. XVIII, 1906, pp. 125, 198, Pl. 18, f. 3—6, Pl. 28, f. 70.
Environs of Paramaribo. van Heurn, 1911.

This species, widely distributed in the West-Indies, Central-America and the north of South-America, was not yet recorded from the Guyana's.

* 44 OPEAS MICRA d'Orb.

Helix micra, d'Orbigny, Mag. de Zool., 1835, p. 9.
Opeas micra d'Orb., Pilsbry, Man. of Conch., 2. ser., Vol. XVIII, 1906, p. 193, Pl. 27, f. 49, 56, 57.
Environs of Paramaribo. van Heurn, 1911.
? Martens, 1873, p. 215. Surinam.

1) Journ. of Conch., VIII, p. 244.

As von Martens considers his *O. micra* and *O. caraccasense* Rve to be synonymous, and according to Pilsbry *O. caraccasense* is identical with *O. beckianum* Pfr., very likely the true *O. micra* has not been found till now in Surinam.

* 45. OPEAS BECKIANUM Pfr.

Bulimus beckianus, Pfeiffer, Symb. ad Hist. Helic. III, 1846, p. 82.
Bulimus caraccasensis, Reeve, Conch. Icon., Vol. V, 1849, Bulimus, spec. 580.
Opeas beckianum Pfr., Pilsbry, Man. of Conch., 2. ser., Vol. XVIII, 1906, p. 189, Pl. 27, f. 42—46, 54, 55.

Post Groningen.	Voltz.
Post Groningen.	van Heurn, 1911.
Environs of Paramaribo.	van Heurn, 1911.
Pfeiffer, 1872, p. 76.	Environs of Paramaribo.

In one Paramaribo-specimen and in the Post Groningen-specimens the whorls are narrower, and the spire is a trifle more pointed than in the two other, more elongated specimens from Paramaribo.

* 46. OPEAS HEURNI nov. sp. (fig. 9).

Shell narrowly perforate, oblong, thin, subtransparent, stained with whitish spots; spire turrite, with rather obtuse summit. Whorls $6^1/_2$, convex, slowly increasing, arcuately and faintly striate. Aperture subvertical oval; outer and basal lip thin; columellar margin reflexed.

Length 8, diam. 3, length of aperture $2^3/_4$ m.M.

Type in the Leyden Museum.

Environs of Paramaribo.	van Heurn, 1911.

I could not identify this shell with any of the species recorded from South-America. Mr. Robson wrote to me this *Opeas* being very near an unnamed species from Brazil in the British Museum.

I have much pleasure in dedicating this new species to its discoverer Jhr. W. C. van Heurn.

* 47. SUBULINA OCTONA Brug.

Bulimus octonus, Bruguière, Encycl. Méth., I, 1792, p. 325.

Achatina trochlea, Pfeiffer, Symb. ad Hist. Helic. II, 1842, p. 59.
Subulina octona Brug., Pilsbry, Man. of Conch., 2. ser., Vol. XVIII, 1906, pp. 72, 222, Pl. 12, f. 8, 9, Pl. 39, f. 28—37, 39, 40.

Environs of Paramaribo.	van Heurn, 1911.
Post Groningen.	van Heurn, 1911.
Coronie.	van Heurn, 1911.
Nickerie.	van Heurn, 1911.
Pfeiffer, 1872, p. 76.	Environs of Paramaribo.
Martens, 1873, p. 218.	Surinam.

This widely distributed species appears to occur very abundantly in Surinam.

* 48. Leptinaria lamellata Pot. et Mich.

Achatina lamellata, Potiez et Michaud, Gal. Moll. Mus. Douai I, 1838, p. 128, Pl. 11, f. 7, 8.
Achatina funcki, Pfeiffer, Proc. Zool. Soc., 1847, p. 232.
Leptinaria lamellata Pot. et Mich., Pilsbry, Man. of Conch., 2. ser., Vol. XVIII, 1906, p. 288, Pl. 42, f. 39, 40, Pl. 43, f. 50, Pl. 46, f. 1—4.

Raleigh Falls (Coppename).	Coppename-Expeditie.
Environs of Paramaribo.	van Heurn, 1911.
Pfeiffer, 1872, p. 76.	Environs of Paramaribo.
Martens, 1873, pp. 192, 215, 218.	Surinam.
Pilsbry, 1906, p. 291.	Surinam.

The specimens from Paramaribo are varying very much in shape and size; the extreme forms however are connected by intermediate ones. This species seems to be very common in the neighbourhood of Paramaribo.

* 49. Pupa eyriesi Drouet.

Pupa eyriesii, Drouet, Essai sur les Moll. terr. et fluv. de la Guyane française, 1859, p. 71, T. 2, f. 16, 17.
Lechmere Guppy, Journ. of Conch., VII, 1893, p. 220.

Nickerie.	Voltz.

Though the length of this minute shell is 2 m.M., and the diameter only 1 m.M., Drouet giving for the type: length $1^1/_2$, diam. 1 m.M., (on his magnified figure the relation is 11 : 6), the impression near the aperture induces me to consider this single specimen as *P. eyriesi.*

* 50. Omalonyx unguis d'Orb.

Helix (Cochlohydra) unguis, Férussac, in coll.
Succinea (Omalonyx) unguis, d'Orbigny, Mag. de Zool., 1835, p. 2; Moll. Voyage Amér. mérid., 1835—43, p. 229, Pl. 22, f. 1—7.
Martens, Festschr. hundertj. Best. Ges. naturf. Fr. Berlin, 1873, p. 193.

Environs of Paramaribo.	van Heurn, 1911.
Commewijne.	van Heurn, 1911.
Nickerie.	van Heurn, 1911.

Want of means of comparison with specimens from other localities in South-America and the Antilles, induces me to regard the specimens collected in Surinam as belonging to this species, according to Fischer, Journ. de Conch. XXII, 1874, p. 140, who will reserve the name *O. unguis* for the continental form, and that of *O. guadeloupensis* Less. for the Antillean one. Possibly the latter species is synonymous with *O. felinus* Guppy from Trinidad, and is only a variety of *O. unguis*. Lechmere Guppy quotes the locality Guyana for *O. unguis* (Journ. of Conch., VII, 1893, p. 221).

51. Planorbis olivaceus Spix.

Planorbis olivaceus, Spix, Testac. fluviat. Brasil., 1827, p. 26, T. 18, f. 2.
Dunker, Syst. Conch. Cab., Ed. nov., Band I, Abt. 17, 1886, p. 48, T. 8, f. 22—24.
Drouet, 1859, p. 42. Surinam.

When dealing with the next species, I will say my opinion on the occurrence of *P. olivaceus* in Guyana.

* 52. Planorbis guadelupensis Sow.

Planorbis guadelupensis, Sowerby, Genera of Shells, 1820—24, f. 6.
Dunkler, Syst. Conch. Cab., Ed. nov., Band I, Abt. 17, 1886, p. 50, T. 8, f. 7—9.
Martens, Festschr. hundertj. Best. Ges. naturf. Fr. Berlin, 1873, p. 195, T. 2, f. 7.
Planorbis xerampelinus, Drouet, Moll. terr. et fluv. Guyane franç., 1859, p. 76, T. 2, f. 27—29.
Nickerie. Voltz.

Coast of Surinam.	ten Kate.
Environs of Paramaribo.	van Heurn, 1911.
Coronie.	van Heurn, 1911.
Drouet 1859, p. 76.	Rivers and ditches in Surinam.
Martens, 1873, p. 195.	Surinam.

At first I felt inclined to classify the great number of specimens, collected by Mr. van Heurn, in two or three different species. There are some very large specimens, having a longest diameter of 30 m.M. and more (one specimen 34 m.M.), which, when not found together with the other ones, I would be inclined to consider as *P. olivaceus*. When comparing them however with true *P. olivaceus*, they appear to have the base much less funnel-shaped and the last whorl less compressed; moreover this whorl, viewed from the basal side, does not surpass so much in width the preceding as in *P. olivaceus*. The majority of the shells has a longest diam. of 17 à 20 m.M., and possesses about 6 whorls. These ones are connected by intermediate forms with the large specimens having about $7^1/_2$ whorls, and also with very small, immature ones of about 4 whorls. After having carefully compared the corresponding whorls in the whole series, I failed to find sufficient grounds for separating the large and the smaller specimens. A very distinct feature is the deeply funnel-shaped upper side, and the rather plain basal side, the latter having only a shallow funnel in the centre. The last whorl of the larger specimens has its greatest width above the periphery.

Possibly the average specimens of this species have a longest diam. of about 18 m.M. and 6 whorls, and only under very favorable circumstances they are forming 1 à $1^1/_2$ whorl more, and are reaching the size of *P. olivaceus* and *P. cumingianus* Dkr. By no means being willing to doubt the occurrence in Surinam of *P. olivaceus*, I only will suppose the possibility that the large specimens of *P. guadelupensis* have been mistaken for it.

* 53. PLANORBIS LUGUBRIS Wagn.

Planorbis lugubris, Wagner, Testac. fluviat. Brasil., 1827, p. 26, T. 18, f. 3—6.

Clessin, Syst. Conch. Cab., Ed. nov., Band I, Abt. 17, 1886, p. 114, T. 12, f. 17—19.
Martens, Festschr. hundertj. Best. Ges. naturf. Fr. Berlin, 1873, p. 196, T. 2, f. 8, 9.
Environs of Paramaribo. van Heurn, 1911.

A single specimen only was collected. At first sight it is distinguished from a specimen of *P. guadelupensis*, having the same size, by its greater regularity in shape and its greater number of whorls. It has $6^3/_4$ whorls, and a longest diameter of 17 m.M.

* 54. Planorbis kühnerianus Cless.

Planorbis kühnerianus, Clessin, Syst. Conch. Cab., Ed. nov., Band I, Abt. 17, 1886, p. 108, T. 11, f. 12.
Environs of Paramaribo. van Heurn, 1911.
Clessin, 1886, p. 108. Surinam.

Only one specimen of this little shell has been found by me in Mr. van Heurn's collection.

55. Planorbis surinamensis Cless.

Planorbis surinamensis, Clessin, Syst. Conch. Cab., Ed. nov., Band I, Abt. 17, 1886, p. 126, T. 17, f. 11.
Clessin, 1886, p. 126. Environs of Paramaribo.

* 56. Physa sowerbyana d'Orb.

Physa sowerbyana, d'Orbigny, Moll. Cuba, I, 1855, p. 190, Pl. XIII, f. 11—13.
Physa rivalis, Sowerby (non Maton et Rackett, 1807), Genera of Shells, 1820—24, Limnaea, f. 9.
Martens, Festschr. hundertj. Best. Ges. naturf. Fr. Berlin, 1873, p. 199.
Environs of Paramaribo. van Heurn, 1911.

A great number of specimens was collected in the neighbourhood of Paramaribo. Unfortunately it is not indicated on the label if they are found at various places, in order to make it possible to explain the differences in size and shape. Until I get more specimens of *Physa* from various localities, with careful indications of the physical conditions they were living in, I feel inclined to consider all the Paramaribo-specimens as *P. sowerbyana*. Some of them are

agreeing very much with specimens of *P. venezuelensis* Marts., other ones with specimens of *P. striata* Shuttl. (non d'Orb.) both of them from the Berlin Museum, and identified by the late Prof. von Martens himself. There are however also specimens, gradually connecting these forms with the majority of specimens, which agree with the *P. rivalis* of several authors. — von Martens says that *P. rivalis* Sow., *striata* Shuttl., and *venezuelensis* are very closely related; I should not wonder if a very great quantity of specimens from various localities of South-America and the Antilles will give evidence that they all represent only one and the same species, whose shell is liable to a considerable variability.

There is existing in literature some confusion as regards the name of this species. Many authors consider *rivalis* Sow. being identical with *rivalis* Mat. et Rack. The latter however is a European mollusc, related to, or probably the same as *P. fontinalis* L.; *P. rivalis* Sow., according to the rules of nomenclature, must change its name in *P. sowerbyana* d'Orb.

57. LYMNAEA spec.

Kappler, 1887, p. 204. Surinam.

As far as I know, no species of *Lymnaea* is reported from the Guyana's or Venezuela. However it is not unlikely this genus, occurring in Brazil and on the Antilles, will be found also in northern South-America.

* 58. AURICULASTRA PELLUCENS Mke.

Auricula pellucens, Menke, Synopsis Moll., Ed. II, 1830, p. 131.
Auriculastra pellucens Mke, Kobelt, Syst. Conch. Cab., Ed. nov., Band I, Abt. 16, 1901, p. 101, T. 15, f. 5, 6.

Surinam. Voltz.
Surinam. Bolten, 1910.
Nickerie. ten Kate.
Environs of Paramaribo. van Heurn, 1911.
Schepman, 1887, pp. 156, 164. Nickerie.

* 59. MELAMPUS COFFEA L.

Bulla coffea, Linné, Syst. Nat., Ed. X, 1758, p. 729.

Auricula coniformis Brug., Küster, Syst. Conch. Cab., Ed. nov., Band I, Abt. 16, 1844, p. 31, T. 4, f. 14—17.
Melampus coffea L., Crosse et Fischer, Moll. terr. et fluv. du Mexique et du Guatemala, II, 1900, p. 23, Pl. 34, f. 10, 10*a*.

Nickerie.	Voltz.
Nickerie.	ten Kate.
Surinam.	Bolten, 1910.
Environs of Paramaribo.	van Heurn, 1911.

Schepman, 1887, pp. 156, 164. Anna Catharina on the Mattapica-Canal, Post Groningen.

Most of the specimens seem to have been collected in dead and subfossil condition.

* 60. MELAMPUS PUSILLUS Gmel.

Voluta pusilla, Gmelin, Syst. Nat., p. 3436.
Auricula nitens Lam., Küster, Syst. Conch. Cab., Ed. nov., Band I, Abt. 16, 1844, p. 18. T. 2, f. 11—13.

Surinam.	?
Surinam.	Ancien Cabinet.

The *Auricula* species, recorded from Surinam by Kappler, 1887, p. 204, very likely is one of the three preceding species.

* 61. BLAUNERIA HETEROCLITA Mont.

Voluta heteroclita, Montagu, Testac. Brit. Suppl., 1808, p. 169.
Achatina pellucida, Pfeiffer, Arch. f. Naturgesch., I, 1840, p. 252.
Blauneria heteroclita Mont., Kobelt, Syst. Conch. Cab., Ed. nov., Band I, Abt. 16, 1901, p. 260, T. 31, f. 19, 20.

Nickerie.	Voltz.

PROSOBRANCHIA.

* 62. NERITINA ZEBRA Brug.

Nerita zebra, Bruguière, Mém. Soc. Hist. Nat. Paris, 1799, p. 126.
Neritina zebra Lam., Reeve, Conch. Icon., Vol. IX, Neritina, spec. 39.
Neritina zebra Brug., Martens, Syst. Conch. Cab., Ed. nov., Band II, Abt. 10, 1879, p. 117, T. 10, f. 1—4, T. 2, f. 8—10.

Nickerie.	Voltz.

Nickerie.	ten Kate.
Galibi.	ten Kate.
Surinam River at Paramaribo.	Horst, 1907.
Environs of Paramaribo.	van Heurn, 1911.
Post Groningen.	van Heurn, 1911.
Martens, 1873, pp. 210, 216.	Surinam.
Martens, 1879, p. 118.	Surinam.
Kappler, 1887, p. 203.	Surinam.

* 63. ALCADIA SERICEA Drouet.

Helicina sericea, Drouet, Moll. terr. et fluv. Guyane franç., 1859, p. 75, T. II, f. 18—20.

Alcadia sericea Drou., Wagner, Syst. Conch. Cab., Ed. nov., Band I, Abt. 18, neue Folge, 1911, p. 62, T. 10, f. 1—4.

Environs of Paramaribo.	van Heurn, 1911.

This is the typical *A. sericea*, the shell-epidermis bearing closely set rows of hairs.

63*a*. ALCADIA SERICEA Drou., var. KÜHNI Pfr.

Helicina kühni, Pfeiffer, Malakozool. Bl. XIX, 1872, p. 76, T. 2, f. 11, 12.

Alcadia sericea Drou., var. *kühni* Pfr., Wagner, Syst. Conch. Cab., Ed. nov., Band I, Abt. 18, neue Folge, 1911, p. 63, T. 10, f. 5—7.

Pfeiffer, 1872, p. 76.	Bergendal (Upper Surinam River).
Martens, 1873, p. 217.	Surinam.
Wagner, 1911, p. 63.	Upper Surinam River.

64. ALCADIA HISPIDA Pfr.

Helicina hispida, Pfeiffer, Arch. f. Naturgesch., I, 1839, p. 355.

Alcadia hispida Pfr., Wagner, Syst. Conch. Cab., Ed. nov., Band I, Abt. 18, neue Folge, 1911, p. 55, T. 8, f. 8—12.

Martens, 1873, p. 217.	Surinam.

* 65. LUCIDELLA LIRATA Pfr., var. LAMELLOSA Guppy.

Helicina lamellosa, Guppy, Ann. Mag. Nat. Hist. (3), XIX, 1867, p. 260.

Lucidella lirata Pfr., var. *lamellosa* Guppy, Wagner, Syst. Conch. Cab., Ed. nov., Band I, Abt. 18, neue Folge, 1911, p. 341, T. 68, f. 4.

Environs of Paramaribo. van Heurn, 1911.

Since the lirae on the whorls are rather distantly placed, and alternatively higher and lower, I feel obliged to range the specimens from Paramaribo under the variety, recorded from Trinidad.

* 66. AMPULLARIA LINEATA Spix.

Helix lineata, Spix, Testac. fluviat. Brasil., 1827, Pl. 5, f. 2.
Ampullaria lineata Spix, Philippi, Syst. Conch. Cab., Ed. nov., Band I, Abt. 20, 1851, p. 11, T. 2, f. 5, 6.
Ampullaria chemnitzii, Philippi, Syst. Conch. Cab., Ed. nov., Band I, Abt. 20, 1851, p. 39, T. 10, f. 5.
Ampullaria lineata Spix, Sowerby, Proc. Mal. Soc. VIII, 1909, p. 354.

Plantation Catharina Sophia (near Post Groningen). ?
Coast-region of Surinam. ten Kate.
Environs of Paramaribo. van Cappelle, 1900.
Surinam. Bolten, 1910.
Environs of Paramaribo. van Heurn, 1911.
Post Groningen. van Heurn, 1911.
Drouet, 1859, pp. 42, 80. Surinam.
Martens, 1873, p. 218. Surinam?

This species appears to be very common in the neighbourhood of Paramaribo.

? 67. AMPULLARIA CANALICULATA Lam.

Ampullaria canaliculata, Lamarck, Hist. nat., 1819, Vol. VI, p. 178.
Philippi, Syst. Conch. Cab., Ed. nov., Band I, Abt. 20, 1851, p. 66.
Sowerby, Proc. Mal. Soc. VIII, 1909, pp. 346, 363.
Martin, 1888, p. 68. Surinam River.

There is much confusion with regard to this species. Many specimens of other species having done duty for it in various collections, as stated by Mr. Sowerby, and also in the Leyden Museum some specimens of *A. lineata* having been labelled *A. canaliculata*, I feel much inclined to consider the specimens collected by Prof. Martin, as belonging to the preceding species.

* 68. AMPULLARIA LEVIOR Sow.

Ampullaria levior, Sowerby, Proc. Mal. Soc. VIII, 1909, p. 361, fig. p. 362.

Environs of Paramaribo. van Heurn, 1911.

Among the specimens of *A. lineata*, collected near Paramaribo by Mr. van Heurn, there was one specimen, characterized by an expanded peristome, and agreeing with the description and figure, given by Mr. Sowerby. It has the same size as the type, the aperture measures 34 × 23 m.M. Mr. Fulton, who had the kindness to compare it with specimens in the collection of himself and Mr. Sowerby, wrote to me he could not separate it from *A. levior*.

* 69. AMPULLARIA SINAMARINA Brug.

Bulimus sinamarinus, Bruguière, Journ. Hist. Nat. I, p. 342, T. 18, f. 2, 3.

Ampullaria sinamarina Brug., Philippi, Syst. Conch. Cab., Ed. nov., Band I, Abt. 20, 1851, p. 27, T. 7, f. 5.

Sowerby, Proc. Mal. Soc. VIII, 1909, p. 357.

Surinam.	Voltz.
Nickerie.	Voltz.
Lawa River.	Gonini-Expeditie.
Lenabari.	Gonini-Expeditie.
Upper Gran Rio.	Corantijn-Expeditie.
Lucie River.	Corantijn-Expeditie.
Martin, 1888, p. 68.	Surinam River.

All specimens, the young ones included, have the apex eroded. This species appears to occur in the principal rivers of Surinam.

* 70. AMPULLARIA GRANULOSA Sow.

Ampullaria granulosa, Sowerby, Proc. Mal. Soc. I, 1894, p. 49, Pl. 4, f. 24.

Litani.	Gonini-Expeditie.
Lawa.	Gonini-Expeditie.

Unfortunately only one specimen from each locality was collected. The Litani-specimen measures: length 76, diam. 74, length of aperture 56 1/2, diam. 38 m.M.; the Lawa-specimen: length 59, diam. 53, length of aperture 44, diam. 28 m.M.

The smaller specimen has the granulation of the surface coarser than the larger one.

* 71. AMPULLARIA CASTELLOI SOW.

Ampullaria castelloi, Sowerby, Proc. Mal. Soc. I, 1894, p. 48, Pl. 4, f. 22.

Lawa. Gonini-Expeditie.

A small, much eroded specimen, with the surface very finely granulated.

* 72. AMPULLARIA CRASSA Swains.

Ampullaria crassa, Swainson, Zool. Illustr., ser. I, Vol. III, 1822—33, Pl. 101.
Reeve, Conch. Icon., Ampullaria, spec. 5.
Sowerby, Proc. Mal. Soc. VIII, 1909, p. 347.

Lawa. Gonini-Expeditie.

The specimens are not fully developed. The surface of the last whorl is sculptured with a fine granulation. Some of the youngest specimens are still partly covered by a brownish epidermis, showing spiral folds. All specimens, the youngest included, have the apex eroded.

* 73. AMPULLARIA SOWERBYI nov. sp. (fig. 13).

Shell imperforate, rather solid, ovoid, olivaceous with brownish bands, in some places darker coloured, encircling the whorls. Spire conic, whorls (in the single young specimen only $4^1/_4$) convex, sculptured by spiral striae, irregularly placed, which are decussated by also irregular grooves, thus giving origin to small knobs, varying in size and shape; under a strong lens the larger knobs are seen to be finely striated longitudinally. Aperture ovate, straight. Columella oblique.

Length 14, diam. 11 m.M.

Type in the Leyden Museum.

Lawa. Gonini-Expeditie.

A very small shell, probably immature, but characterized by a remarkable sculpture, that will make it easily

recognisable. Mr. Sowerby wrote to me it being quite different from anything he knew. As very unfortunately is the case with many shells collected by the Surinam-Expeditions, only a single specimen of this interesting species is found.

I wish to dedicate this species to Mr. G. B. Sowerby at Kew.

? 74. AMPULLARIA URCEUS Müll.

Nerita urceus, Müller, Hist. Verm. II, 1774, p. 174.
Ampullaria urceus Müll., Philippi, Syst. Conch. Cab., Ed. nov., Band I, Abt. 20, 1851, p. 54, T. 17, f. 1.
Sowerby, Proc. Mal. Soc. VIII, 1909, p. 358.
Martens, 1873, pp. 201, 215. Surinam.

von Martens apparently gives the locality „Surinam" upon Lister's authority. But Lister, Hist. Conch. 125, 25, does not mention any locality. When von Martens is right in bringing Drouet's *A. guyanensis* to this species, it would be occurring in French- and in British Guyana, and its occurrence in Surinam would not be surprising.

? 75. AMPULLARIA GUYANENSIS Lam.

Ampullaria guyanensis, Lamarck, Hist. nat., Vol. VI, 1819, p. 176.
Philippi, Syst. Conch. Cab., Ed. nov., Band I, Abt. 20, 1851, p. 68.
Sowerby, Proc. Mal. Soc. VIII, 1909, pp. 351, 363.
Lister, 1685, 128, 28. Surinam.

According to Philippi, the figure of Lister represents this species. From this figure, to which is added the locality „Surinam", one can only infer that a very large specimen of a banded *Ampullaria* spec. has been collected in Surinam.

* 76. AMPULLARIA GLAUCA L.

Helix glauca, Linné, Mus. Ulric., 1764, p. 667.
Nerita effusa, Müller, Hist. Verm. II, 1774, p. 175.
Ampullaria glauca L., Philippi, Syst. Conch. Cab., Ed. nov., Band I, Abt. 20, 1851, p. 43, T. 12, f. 4.
Sowerby, Proc. Mal. Soc. VIII, 1909, p. 350.

Surinam.	Grinwis Plaat.
Marowijne.	Tapanahoni-Expeditie.
Lucie River.	Corantijn-Expeditie.
Environs of Paramaribo.	van Heurn, 1911.
Drouet, 1859, pp. 42, 78.	Paramaribo.
Martens, 1873, p. 216.	Surinam.
Kappler, 1886. p. 203.	Surinam.

The specimens from various parts of Surinam in the Leyden Museum are olivaceous. The last whorl is encircled by many dark brown bands, in some specimens coalescing, and almost obscuring the ground colour. This species appears to occur abundantly in various parts of the colony.

* 76*a*. AMPULLARIA GLAUCA L., var. ORONOCENSIS Rve. (fig. 14).

Ampullaria oronocensis, Reeve, Conch. Icon., Vol. X, 1856, Ampullaria, spec. 45.

Ampullaria glauca L., var. *oronocensis* Rve, Sowerby, Proc. Mal. Soc. VIII, 1909, p. 351.

Litani.	Gonini-Expeditie.
Upper Gran Rio.	Corantijn-Expeditie.

The Gran Rio-specimen measures: length 56, diam. 63, length of aperture 47, diam. 30 m.M.; the Litani-specimen: length 61, diam. 74, length of aperture 54, diam. 34 m.M. It must be observed, that the apex in both shells is eroded, the real length of the shell therefore will be a trifle more. I think *A. castanea* Desh. is nearly related to my specimens, and will prove to be also a variety of *A. glauca*.

? 77. CYCLOSTOMA spec.

Kappler, 1887, p. 204.	Surinam.

No true *Cyclostoma* being recorded from the new world, Kappler's specimens might have been a *Neocyclotus* spec.

? 78. HYDROBIA spec. cf. STAGNALIS Baster.

Turbo stagnalis, Baster, Opusc. subsec. II, 1765, p. 77, Pl. 8, f. 4 A, B.

Hydrobia stagnalis Baster, Dollfus, Journ. de Conch. LIX, 1912, p. 234, Pl. 5, f. 1—8, 11—18.

Martens, 1858, p. 177.	Surinam.
Martens, 1873, pp. 209, 216.	Surinam.

von Martens, 1858, says that he does not know if the locality „Surinam" is right. He has found however the same species in „Schneckenerde" from Venezuela.

* 79. Doryssa lamarckiana Brot.

Doryssa lamarckiana, Brot, Amer. Journ. of Conch. VI, 1870—71, p. 305; Syst. Conch. Cab., Ed. nov., Band I, Abt. 24, 1874, p. 344, T. 35, f. 1, 1*a*.

Upper Nickerie.	ten Kate.
Corantijn.	ten Kate.
Surinam.	Saramacca-Expeditie.
Lucie River.	Corantijn-Expeditie.

* 80. Doryssa atra Rich.

Bulimus ater, Richard, Act. Soc. Hist. Nat., 1792, p. 126.
Doryssa atra Rich., Brot, Syst. Conch. Cab., Ed. nov., Band I, Abt. 24, 1874, p. 342, T. 35, f. 7.

Lenabari.	Gonini-Expeditie.
Lawa.	Gonini-Expeditie.
East Surinam.	Tapanahoni-Expeditie.
Martens, 1873, pp. 207, 216.	Surinam.
Brot, 1874, pp. 343, 344.	Marowijne.
Kappler, 1887, p. 203.	Surinam.

The specimens of this and the preceding species, collected by Mr. ten Kate and by four Surinam-Expeditions have much puzzled me, and it is still with some reserve that I have ranged them under one species or the other. Many specimens being not yet fully developed, and having not formed their definitive peristome, it becomes still more difficult to separate them. One of the *D. lamarckiana* from the Corantijn is agreeing very much with Brot's fig. 1; the *D. atra* specimen, collected in the Lawa River, is much like Brot's fig. 7. After having carefully compared the fullgrown specimens in the Leyden Museum, I separated them according to the following key:

	lamarckiana	*atra*
shape	cone shorter and wider	cone more slender and elongated

	lamarckiana	*atra*
last whorl	a little ascending at the peristome	not ascending
axis of peristome	very oblique	slightly oblique
outer and basal lip	thickened	sharp
callus on inner lip	thick	thin
between base of peristome and columella	gutter	no gutter

I feel obliged however to admit that some specimens, ranged by me under *D. lamarckiana*, seem to be intermediate forms between both species. Perhaps a sexual difference might be expressed by the shape of the shell. Until a great number of specimens from all parts of the Guyana's will be collected, I will not impute too much importance to the fact that most of the *D. lamarckiana* are recorded from the western parts, most of the *D. atra* from the eastern parts of Guyana.

*81. DORYSSA DEVIANS Brot.

Doryssa devians, Brot, Syst. Conch. Cab., Ed. nov., Band I, Abt. 24, 1874, p. 352, T. 35, f. 10, 10*a*—*c*.

Lawa.	Gonini-Expeditie.
Lenabari.	Gonini-Expeditie.
Brot, 1874, p. 352.	Upper-Surinam River, Marowijne.
Schepman, 1887, p. 155.	Marowijne (subfossil).
Martin, 1888, p. 68.	Surinam River.

The Lenabari-specimens are agreeing with the intermediate form, Brot's fig. 10*a*; the Lawa-specimens, that are not or very faintly shouldered at the last whorl, are more like the var. β of Brot, fig. 10*b*. Most of the specimens have the spire strongly decollated and eroded. Exceptionnally one Lawa-specimen is lacking only a few whorls at the apex; its length is 80 m.M.

*82. DORYSSA GRACILIS nov. sp. (fig. 10).

Shell oblong, turrite, solid, dark greenish brown, with olivaceous spots visible at the base. Apex decollated, remaining whorls 6, slowly increasing, with spiral wrinkles,

and strongly developed ribs, vanishing on the base of the last whorl. Whole the surface covered by a network of very fine decussating lines, only seen by a strong lens. Last whorl not ascending. Aperture ovate, pointed at the suture, obtuse at the base, rather straight. Columella twisted. Margins of peristome joined by a rather thick, bluish callus.

Length (decollated) 21, diam. 8, length of aperture 7, diam. 5 m.M.

Type in the Leyden Museum.

Corantijn. ten Kate.

This species is much like a dwarf specimen of *D. atra*. The ribs are stronger than in that species, moreover they are very distinct on the last whorl. The shape of the aperture is different, the longitudinal axis being more oblique than in *D. atra*.

* 83. DORYSSA KAPPLERI nov. sp. (fig. 11).

Shell conic, rather thin, olivaceous with dark brown spots and stripes, forming interrupted spiral bands. Apex a little decollated, whorls flat, somewhat crisped, sculptured with microscopical, decussating lines. Last whorl (of the apparently immature specimens) carinated, with distinct spiral wrinkles on its base. Columella twisted.

Type in the Leyden Museum.

Surinam. Coppename-Expeditie.
Lucie River. Corantijn-Expeditie.

It is with some hesitation that I have created a new species for the three specimens, collected by the first and the seventh Surinam-Expedition, because they are apparently immature. Nevertheless I think this species will be easily recognized when other specimens of it might be collected. It has a much more conic shape than young specimens of *D. hohenackeri*.

I have dedicated it to the memory of Mr. August Kappler, who lived in Surinam during about 45 years, and who has done much to promote our knowledge about this colony.

*84. DORYSSA GUYANENSIS nov. sp. (fig. 12).

Shell cylindro-conic, rather thin, olivaceous with dark spots and stripes, on the last whorl arranged somewhat regularly, forming longitudinal streaks. Apex decollated, whorls flat, very faintly sculptured with irregular spiral lines, decussated by inconspicuous growth-wrinkles. Last whorl (of the apparently immature specimens) carinated; its base sculptured with spiral wrinkles. Columella twisted.

Type in the Leyden Museum.

Surinam.	Coppename-Expeditie.
Lucie River.	Corantijn-Expeditie.

This species, of which only two specimens (both very likely immature ones) are collected, is very much resembling the preceding species. It can however easily be distinguished by its different sculpture and colouring, and particularly by its less conic shape. It is intermediate in shape between *D. kappleri* and *D. hohenackeri*, the latter species being still more cylindrical.

85. DORYSSA HOHENACKERI Phil.

Melania hohenackeri, Philippi, Zeitschr. f. Malakozool. VIII, 1851, p. 82.

Doryssa hohenackeri Phil., Brot, Syst. Conch. Cab., Ed. nov., Band I, Abt. 24, 1874, p. 349, T. 35, f. 6.

Philippi, 1851, p. 83.	Mountain-brooks in Surinam.
Martens, 1873, p. 218.	Surinam.
Brot, 1874, p. 349.	Surinam.

The Gonini-Expedition collected some specimens of this species on Mount Cottica in French Guyana.

? 86. MELANIA DECOLLATA Lam.

Melania decollata, Lamarck. Hist. nat., 1835--45, n°. 9.

Brot, Syst. Conch. Cab., Ed. nov., Band I, Abt. 24, 1874, p. 70, T. 7, f. 10, 10*a*.

Kappler, 1887, p. 20.	Surinam.

Like Brot remarks, the locality „Guyana", given for this species, is most likely due to the fact that there exists

much resemblance between it and *Doryssa hohenackeri*. It is recorded however from the Antilles, and the Leyden Museum possesses two specimens from Cuba.

87. HEMISINUS LINEOLATUS Gray.

Strombus lineolatus, Gray in Wood, Index Testac., 1828, Supplem., f. 11.
Hemisinus lineolatus Gray, Brot, Syst. Conch. Cab., Ed. nov., Band I, Abt. 24, 1874, p. 373, T. 38, f. 6, 6 *a—e*.
Martens, 1873, p. 216. Surinam.

PELECYPODA.

* 88. DIPLODON VOLTZI nov. sp. (figs. 16 *a—d*).

Shell somewhat cuneiform in circumference, inflated, inaequilateral. Epidermis blackish, concentrically striated, and sculptured with small wrinkles. By transparent light the colour is greenish. Some small radiating wrinkles visible on the area of the left valve, near the ligament. Dorsal margin ascending, posterior margin faintly rounded, ventral margin rather straight, anterior margin sharply rounded. Nacre bluish near the margins, somewhat roseate in the centre. Right valve with two cardinal teeth: one strong, crenated, the other lamelliform; left valve with one cardinal tooth, longitudinally incised, and crenated on the inner surface of its anterior part. One lamella in the right valve, two lamellae in the left one, all of them curved. Anterior scars deep, separated, posterior scars shallow.

Length 61; height at the umbones 35, largest 37; thickness 27 m.M.

Type in the Leyden Museum.

Surinam. Voltz.

The exact locality, where this specimen is collected in Surinam is unknown; probably it was in the coast-region. The surface of the only specimen is much eroded, so no sculpture is perceptible on the umbones and most part of the area.

Dr. F. Haas at Frankfurt a. M. has had the courtesy of

comparing this shell for me with the rich material of Unionidae, of which he disposes. He wrote to me it being a new species, related to *D. caipira* Ihering and *D. eurhynchus* Küster, perhaps also to *D. divaricatus* Lea.

I have named this species in honour of its discoverer, Mr. F. Voltz, who was collecting in Surinam during the years 1853—1856, and died there a victim of his unfatigable activity.

* 89. CASTALIA SULCATA Krauss (figs. 17 *a—c*).

Castalia sulcata, Krauss, Zeifschr. f. Malakozool. V, 1848, p. 99.

1/ Marowijne. Krauss.
Litani. Gonini-Expeditie.
Krauss, 1848, p. 99. Marowijne.
Kappler, 1887, p. 2. Cataracts of the Marowijne.

This species is larger than *C. ambigua* Lam., and has the concentrical wrinkles well developed al over the surface. The specimens in our collection are lacking the radiating riblets. The much eroded Litani-specimens are larger than the specimen from the Marowijne, obtained from Mr. Krauss himself.

Marowijne-specimen: Length $56^1/_2$; height at the umbones $44^1/_2$, largest 48, thickness $34^1/_2$ m.M.

Litani-specimen: Length 70; height at the umbones 50, largest 52, thickness 43 m.M.

As there is not existing in literature, as far as I know, a figure of this species, I have figured the Marowijne-specimen.

* 90. CASTALIA AMBIGUA Lam.

Castalia ambigua, Lamarck, Hist. nat. 2. éd., 1835—45, VI, p. 522.

Unio ambiguus Lam., Küster, Syst. Conch. Cab., Ed. nov., Band IX, Abt. 2, 1851, p, 165, T. 48, f. 1.

2/ Nickerie. Voltz.
Upper Saramacca River. Saramacca-Expeditie.

Both specimens have the radiating ribs reaching only to the middle of the valves. This species, already reported from British Guyana, was not yet recorded from Surinam.

91. CORBICULA SURINAMICA Cless.

Corbicula surinamica, Clessin, Syst. Conch. Cab., Ed. nov., Band IX, Abt. 3, 1879, p. 178, T. 31, f. 7—9.
Clessin, 1879, p. 178. Surinam.

Clessin is giving only South-America as the habitat of this species, found in the stomach of a fish. The specific name intimates sufficiently its occurrence in Surinam.

92. CORBICULA ROTUNDA Prime.

Corbicula rotunda, Prime, Proc. Ac. N. Sc. Philadelphia, 1860, p. 80.
Clessin, Syst. Conch. Cab., Ed. nov., Band IX, Abt. 3, 1879, p. 204.
Martens, 1873, p. 218. Surinam.
Clessin, 1879, p. 204. Surinam River.

93. CYRENA ORDINARIA Prime.

Cyrena ordinaria, Prime, Monogr. Corbic., 1865, p. 19, f. 20.
Clessin, Syst. Conch. Cab., Ed. nov.. Band IX, Abt. 3, 1879, p. 117, T. 18, f. 8.
Schepman, 1887, p. 159. Marowijne.

94. CYRENA spec.

Schepman, 1887, p. 160. Post Groningen (subfossil).

* 95. IPHIGENIA BRASILIENSIS Lam.

Capsa brasiliensis, Lamarck, Hist. nat., 2. éd., 1835—45, VI, p. 255.
Iphigenia brasiliensis Lam., Römer, Malakozool. Bl. XVI, 1869, p. 151.
Galibi. ten Kate.
Martens, 1873, pp. 213, 218. Surinam.
Schepman, 1887, p. 158. Environs of Paramaribo (subfossil).

The Galibi-specimens are very young ones. Among the subfossil shells from the so-called „schelpritsen" (banks running parallel to the coast and containing mostly marine shells), collected by Mr. van Heurn, I discovered many valves of this species.

* 96. OSTREA PARASITICA Gmel.

Ostraea parasitica, Gmelin, Syst. Nat., 1789, p. 295.
Ostraea parasitica Gmel., Reeve, Conch. Icon. XVIII, 1873, Ostraea, spec. 4.
Surinam. Dieperink.
Environs of Paramaribo. van Heurn, 1911.
Martens, 1873, pp. 213, 218. Surinam.
Kappler, 1887, p. 205. Surinam.
Schepman, 1887, p. 161. Environs of Paramaribo, Anna Catharina (Mattapica Canal), Post Groningen (all subfossil).

Substracting from these 98 species and varieties in the first place the forms, of which the occurrence in Surinam is doubtful or not yet fully stated, and secondly those, which could not be identified, viz. the *Drymaeus* (26), *Corona* (40), *Lymnaea* (57), *Neocyclotus?* (77) and *Cyrena* (94)-species, we have a total sum of only 78 species and varieties, undoubtfully collected in Surinam. Among these 11 species are new to science.

Our knowledge of the mollusc-fauna of Surinam and neighbouring regions is still too little to permit the drawing of any important conclusion as regards the geographical distribution of the species in Surinam itself and in the North-East of South-America.

The following „Table I" shows the distribution of the land- and freshwater- shell-bearing molluscs in Surinam, according to our present knowledge. I have divided the colony in 5 regions, agreeing with the 5 principal river-systems, to which I have added, as a sixth one, the coast-region, including also the inferior course of the rivers. The species, of which only „Surinam" is recorded as their locality, are omitted.

Table II shows the geographical distribution of the non-marine shell-bearing molluscs, recorded from Surinam.

TABLE I.

	Coast-region.	Corantijn.	Coppename.	Saramacca.	Suriname.	Marowijne.
Streptaxis glaber *Pfr.*	+					
Streptaxis deformis *Fér.*	+					
Ennea bicolor *Hutt.*	+					
Scolodonta surinamensis *Pfr.*	+					
Euglandina striatula *Vernh.*						+
Euglandina surinamensis *Vernh.*	+					
Conulus ernsti *Jouss.*	+					
Solaropsis pellisserpentis *Chemn.*				+		
Solaropsis serpens *Martyn*	+				+	
Solaropsis kühni *Pfr.*	+					
Strophocheilus oblongus *Müll.*	+					
Auris distorta *Brug.*	+					
Drymaeus semimaculatus *Pils.*	+					
Drymaeus interruptofasciatus *Vernh.*	+					+
Drymaeus quadrifasciatus *Vernh.*				+		
Drymaeus flavidus *Menke*		+		+		
Drymaeus surinamensis *Vernh.*	+					
Drymaeus succineus *Pils.*	+					
Drymaeus ziegleri *Pfr.*	+					
Bulimulus buenavistensis *Pils.*	+					
Bulimulus unicolor *Sow.*	+					
Zebra bensoni *Rve.*	+			+		
Corona perversa *Swains.*		+	+		+	
Corona regina *Fér.*					+	
Orthalicus sultana *Dillw.*			+	+	+	+
Simpulopsis corrugata *Guppy*	+					
Opeas gracile *Hutt.*	+					
Opeas micra *d'Orb.*	+					
Opeas beckianum *Pfr.*	+					
Opeas heurni *Vernh.*	+					
Subulina octona *Brug.*	+					
Leptinaria lamellata *Pot. et Mich.*	+		+			
Pupa eyriesi *Jouss.*	+					
Omalonyx unguis *d'Orb.*	+					
Planorbis guadelupensis *Sow.*	+					
Planorbis lugubris *Wagn.*	+					
Planorbis kühnerianus *Cless.*	+					
Planorbis surinamensis *Cless.*	+					

	Coast-region.	Corantijn.	Coppename.	Saramacca.	Suriname.	Marowijne.
Physa sowerbyana *d'Orb.*	+					
Neritina zebra *Brug.*	+					
Alcadia sericea *Drouet*	+					
Alcadia sericea *Drouet*, var. kühni *Pfr.*					+	
Lucidella lirata *Pfr.*, var. lamellosa *Guppy*	+					
Ampullaria lineata *Spix*	+					
Ampullaria levior *Sow.*	+					
Ampullaria sinamarina *Brug.*	+	+			+	+
Ampullaria granulosa *Sow.*						+
Ampullaria castelloi *Sow.*						+
Ampullaria crassa *Swains.*						+
Ampullaria sowerbyi *Vernh.*						+
Ampullaria glauca *L.*	+	+				+
Ampullaria glauca *L.*, var. oronocensis *Rve.*					+	+
Doryssa lamarckiana *Brot.*	+	+		+		
Doryssa atra *Rich.*						+
Doryssa devians *Brot.*					+	+
Doryssa gracilis *Vernh.*	+					
Doryssa kappleri *Vernh.*		+	+			
Doryssa guyanensis *Vernh.*		+	+			
Diplodon voltzi *Vernh.*	?					
Castalia sulcata *Krauss*						+
Castalia ambigua *Lam.*	+			+		
Corbicula rotunda *Prime.*	+					
Cyrena ordinaria *Prime*	+					
Iphigenia brasiliensis *Lam.*	+					

TABLE II.

	Guyana.			Venezuela.	Trinidad.	Colombia.	Antilles.	Brazil.	Other American localities.
	French.	British.	without further indication.						
Streptaxis glaber *Pfr.*		+		+					
Streptaxis deformis *Fér.*	+			+	+				
Ennea bicolor *Hutt.*					+		+		
Scolodonta surinamensis *Pfr.*	+ [1]								
Euglandina striatula *Vernh.*									
Euglandina surinamensis *Vernh.*									
Conulus ernsti *Jouss.*				+					
Solaropsis pellisserpentis *Chemn.*	+							+	
Solaropsis serpens *Martyn*	+							+	
Solaropsis monolacca *Pfr.*									
Solaropsis kühni *Pfr.*									
Solaropsis rosarium *Pfr.*						+		+	
Strophocheilus oblongus *Müll.*	+			+	+	+	+	+	Peru, Paraguay, Uruguay.
Auris distorta *Brug.*				+		+			
Drymaeus semimaculatus *Pils.*						+			Central-America.
Drymaeus interruptofasciatus *Vernh.*									
Drymaeus quadrifasciatus *Vernh.*									
Drymaeus flavidus *Menke*				+					
Drymaeus surinamensis *Vernh.*									
Drymaeus succineus *Pils.*								+	
Drymaeus ziegleri *Pfr.*									Mexico.
Bulimulus buenavistensis *Pils.*						+			
Bulimulus unicolor *Sow.*									Central-America.
Zebra bensoni *Rve.*	+							+	Peru, Ecuador.
Zebra pulchellus *Spix.*				+	+				
Corona perversa *Swains.*		+						+	
Corona regina *Fér.*								+	Peru.
Corona incisa *Hupé*		+						+	Bolivia.
Orthalicus sultana *Dillw.*	+	+		+	+	+		+	Bolivia, Peru.
Simpulopsis corrugata *Guppy*					+				
Opeas gracile *Hutt.*				+	+	+	+	+	Ecuador, Central-America, Mexico, Cocos-Island, Alabama.
Opeas micra *d'Orb.*						+	+	+	Bolivia, Central-America, Mexico, Florida.

	Guyana.			Venezuela.	Trinidad.	Colombia.	Antilles.	Brazil.	Other American localities.
	French.	British.	without further indication.						
Opeas beckianum *Pfr.*				+	+	+	+	+	Peru, Central-America, Mexico.
Opeas heurni *Vernh.*									
Subulina octona *Brug.*	+			+	+		+	+	Central-America, Mexico, Florida.
Leptinaria lamellata *Pot. et Mich.*	+	+		+	+	+	+	+	Bolivia.
Pupa eyriesi *Drouet*	+				+				
Omalonyx unguis *d'Orb.*			+	+	?	?		+	Bolivia.
Planorbis olivaceus *Spix.*								+	Mexico.
Planorbis guadelupensis *Sow.*	+			+		+	+		
Planorbis lugubris *Wagn.*		+		+				+	
Planorbis kühnerianus *Cless.*									
Planorbis surinamensis *Cless.*							+		
Physa sowerbyana *d'Orb.*				+	+		+	+	Uruguay, Patagonia.
Auriculastra pellucens *Mke.*	+	+		+			+		Florida.
Melampus coffea *L.*	+				+		+		Florida.
Melampus pusillus *Gmel.*				+	+		+		Florida.
Blauneria heteroclita *Mont.*							+		
Neritina zebra *Brug.*	+	+		+				+	Panama.
Alcadia sericea *Drouet*	+								
Alcadia sericea *Drouet*, var. kühni *Pfr.*	+								
Alcadia hispida *Pfr.*							+		
Lucidella lirata *Pfr.* var. lamellosa *Guppy*				[1] +	+				[1]) Central-America, [1]) Mexico.
Ampullaria lineata *Spix.*	+	+						+	
Ampullaria levior *Sow.*								+	
Ampullaria sinamarina *Brug.*	+	+							
Ampullaria granulosa *Sow.*	+								
Ampullaria castelloi *Sow.*						+			
Ampullaria crassa *Swains.* [2])			+					+	
Ampullaria sowerbyi *Vernh.*									
Ampullaria glauca *L.*	+	+		+	+		+		
Ampullaria glauca *L.*, var. orono-censis *Rve*		+		+					

1) Typical *L. lirata.*

2) A variety occurs in French Guyana, see p. 47.

	Guyana.			Venezuela.	Trinidad.	Colombia.	Antilles.	Brazil.	Other American localities.
	French.	British.	without further indication.						
Doryssa lamarckiana *Brot.*		+							
Doryssa atra *Rich.*	+			+				+	
Doryssa devians *Brot.*									
Doryssa gracilis *Vernh.*									
Doryssa kappleri *Vernh.*									
Doryssa guyanensis *Vernh.*									
Doryssa hohenackeri *Phil.*	+	?							
Hemisinus lineolatus *Gray*	+	+		+				+	
Diplodon voltzi *Vernh.*									
Castalia sulcata *Krauss.*									
Castalia ambigua *Lam.*		+						+	
Corbicula surinamica *Cless.*									
Corbicula rotunda *Prime*									
Cyrena ordinaria *Prime*									
Iphigenia brasiliensis *Lam.*							+	+	
Ostrea parasitica *Gmel.*							+		

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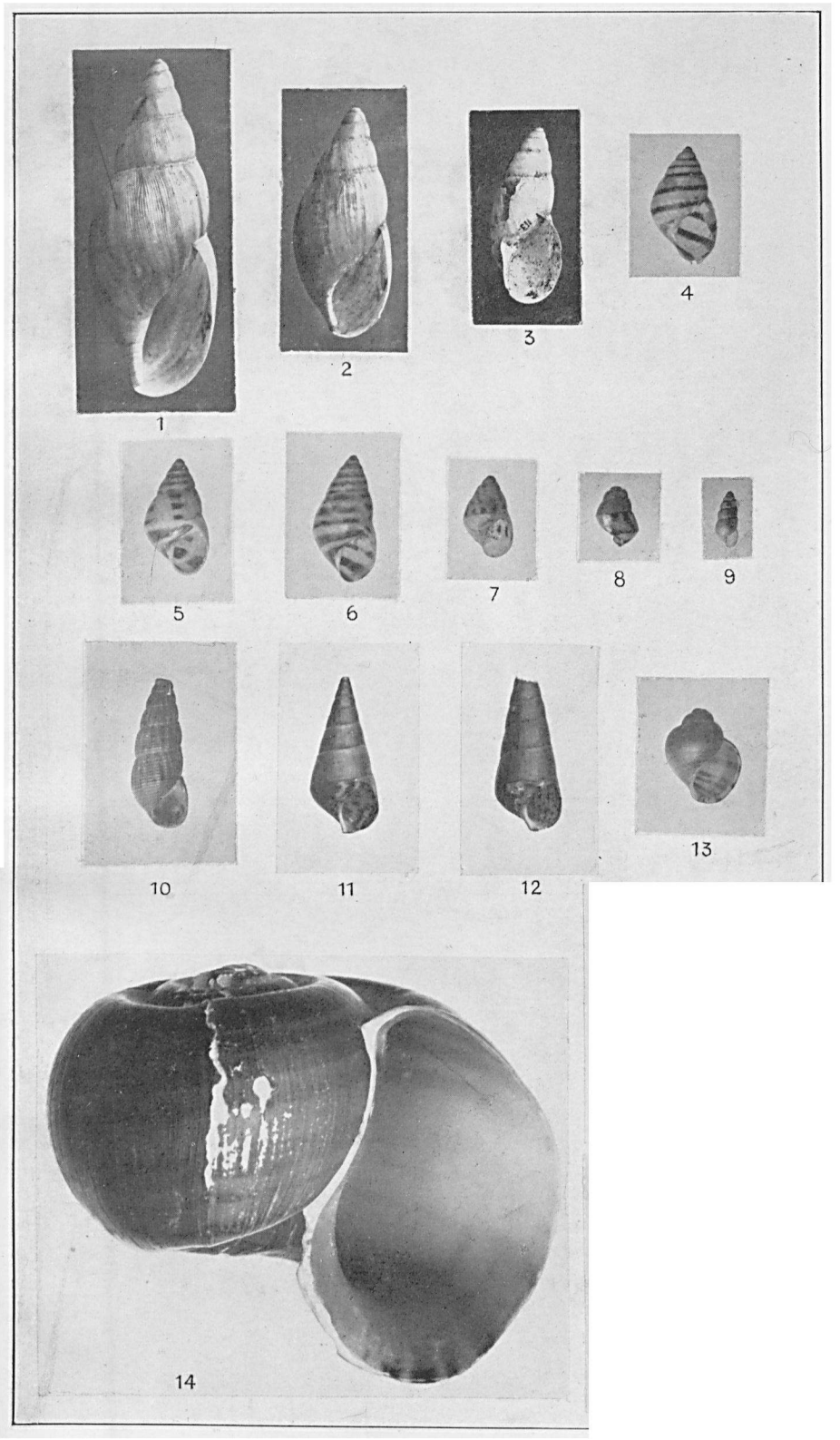
EXPLANATION OF PLATES 1 AND 2.

(All the figures are natural size).

Fig. 1. *Euglandina striatula* nov. spec. (n°. 14). [1])
„ 2. *Euglandina surinamensis* nov. spec. (n°. 16).
„ 3. *Drymaeus surinamensis* nov. spec. (n°. 113).
„ 4. *Drymaeus quadrifasciatus* nov. spec. (n°. 121).
„ 5. *Drymaeus interruptofasciatus* nov. spec. (n°. 109).
„ 6. *Drymaeus interruptofasciatus* nov. spec. (n°. 171).
„ 7. *Drymaeus* spec. (n°. 172).
„ 8. *Corona* spec. (n°. 94).
„ 9. *Opeas heurni* nov. spec. (n°. 136).
„ 10. *Doryssa gracilis* nov. spec. (n°. 123).
„ 11. *Doryssa kappleri* nov. spec. (n°. 124).
„ 12. *Doryssa guyanensis* nov. spec. (n°. 127).
„ 13. *Ampullaria sowerbyi* nov. spec. (n°. 129).
„ 14. *Ampullaria glauca* L., var. *oronocensis* Rve. (n°. 135).
„ 15*a*. [2]) *Ampullaria crassa* Swains., var. *monticola* nov. var. (n°. 132).
„ 15*b*. [2]) *Ampullaria crassa* Swains., var. *monticola* nov. var. (n°. 131).
„ 16*a*, *b*, *c*, *d*. *Diplodon voltzi* nov. spec. (n°. 133).
„ 17*a*, *b c*. *Castalia sulcata* Krauss (n°. 134).

Leyden Museum, December 12, 1913.

1) The numbers are those of the Leyden Museum-collection.
2) See next page.



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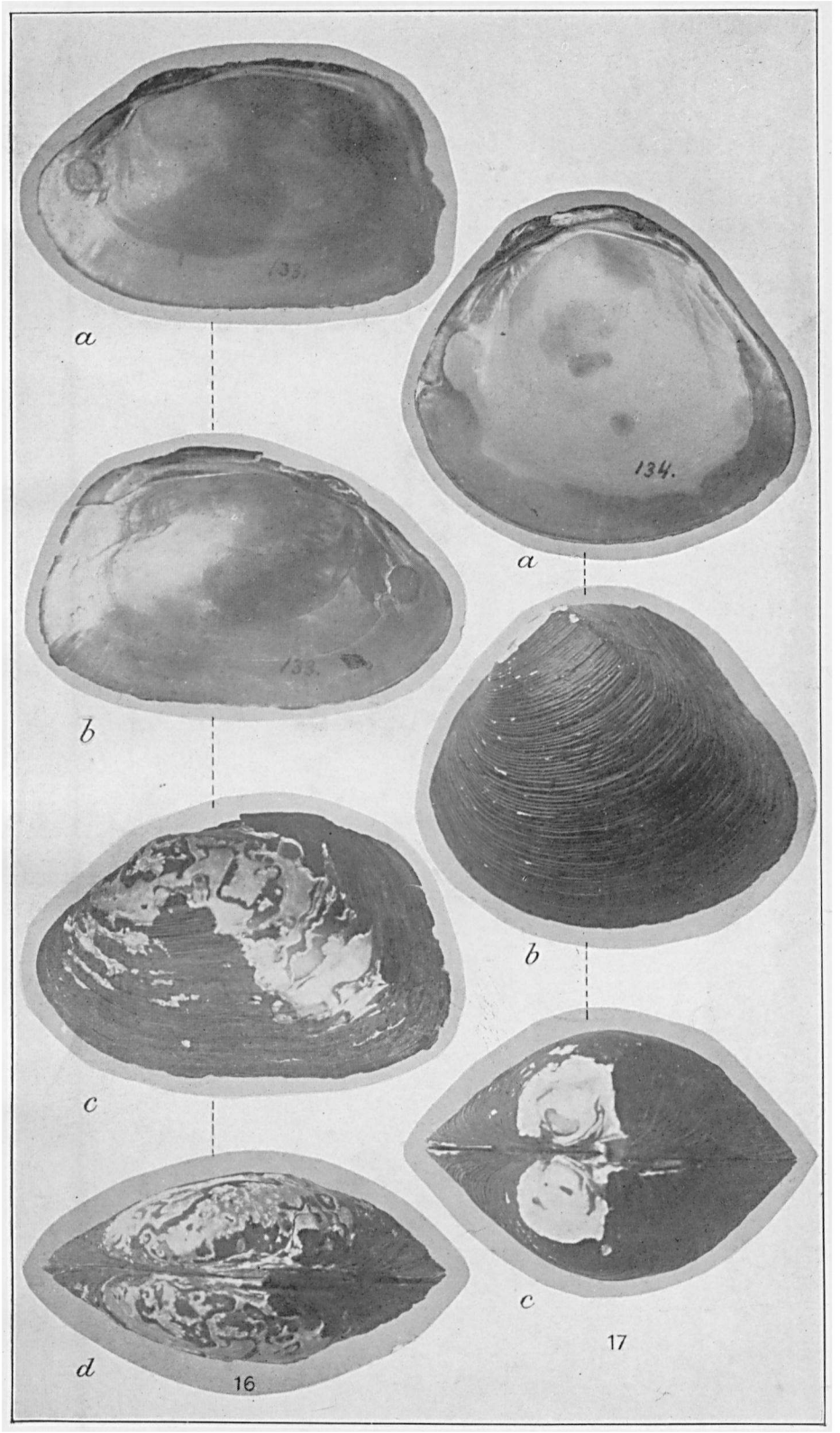
NON-MARINE MOLLUSCS OF SURINAM.



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NON-MARINE MOLLUSCS OF SURINAM.